

03060101-070

(Twelvemile Creek/Lake Hartwell)

General Description

Watershed 03060101-070 is located in Pickens County and consists primarily of *Twelvemile Creek* and its tributaries from Golden Creek to its confluence with the Keowee River forming an arm of *Lake Hartwell*. The watershed occupies 31,043 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Cecil-Hiwassee series. The erodibility of the soil (K) averages 0.26, and the slope of the terrain averages 10%, with a range of 2-25%. Land use/land cover in the watershed includes: 71.7% forested land, 14.8% agricultural land, 8.6% urban land, 2.3% water, 1.3% forested wetland, and 1.3% barren land.

This section of Twelvemile Creek accepts drainage from Golden Creek (Murphey Branch), Shoal Creek, Camp Creek, Huggins Creek, Todd Creek, and Pike Creek before forming an arm of Lake Hartwell. There are a total of 53.8 stream miles and 735.3 acres of lake waters within this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-239	S	FW	GOLDEN CREEK AT S-39-222, 1.2 MI NW OF LIBERTY
SV-738	BIO	FW	GOLDEN CREEK AT GOLDEN CREEK ROAD
SV-015	P	FW	TWELVEMILE CREEK AT S-39-51, N OF NORRIS
SV-137	P	FW	TWELVEMILE CREEK AT S-39-337
SV-136	S	FW	1ST UNNAMED CREEK AFTER LEAVING CENTRAL AT CLVT ON MAW BRIDGE RD
SV-107	P	FW	TWELVEMILE CREEK ARM OF LAKE HARTWELL AT SC 133

Twelvemile Creek - There are three monitoring sites along Twelvemile Creek in this watershed. Aquatic life uses are fully supported at the upstream site (*SV-015*), and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria concentration.

Further downstream (*SV-137*), aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. PCB 1248 was detected in the 1999 sediment sample, and PCB 1254 was detected in the 1997 and 1999 sediment samples. Although the manufacture and use of PCBs was banned in 1979, they are very persistent in the environment. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

At the furthest downstream location in the impounded area of Lake Hartwell (*SV-107*), aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. A very high concentration of chromium was detected in the 1999 sediment sample, and PCB 1254 was detected in the 1996 sediment sample. Recreational uses are fully

supported at this site, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Unnamed Twelvemile Creek Tributary (SV-136) - Aquatic life uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria concentration.

Golden Creek - There are two monitoring sites along Golden Creek. Aquatic life uses are fully supported at the upstream site (**SV-239**); however, there is a significant increasing trend in turbidity. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site (**SV-738**), aquatic life uses are fully supported based on macroinvertebrate community data.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Twelvemile Creek and the impounded area (Lake Hartwell) of Twelvemile Creek within this watershed (see advisory p.37).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD)	NPDES# TYPE COMMENT
LAKE HARTWELL/TWELVEMILE CREEK ARM CLEMSON UNIVERSITY/MAIN PLT WWTP PIPE #: 001 FLOW: 1.15	SC0020010 MINOR DOMESTIC
LAKE HARTWELL/TWELVEMILE CREEK ARM DANIEL HIGH SCHOOL/PICKENS CO. PIPE #: 001 FLOW: 0.02	SC0038652 MINOR DOMESTIC
LAKE HARTWELL/TWELVEMILE CREEK ARM RC EDWARDS JR HIGH SCHOOL PIPE #: 001 FLOW: 0.018	SC0028762 MINOR DOMESTIC
LAKE HARTWELL TRIBUTARY ISIQUEENA MOBILE HOME PARK PIPE #: 001 FLOW: 0.024	SC0023141 MINOR DOMESTIC
HUGGINS CREEK BASF CORP./FIBERS DIV./CLEMSON PIPE #: 002 FLOW: 0.053	SC0000302 MAJOR INDUSTRIAL
TWELVEMILE CREEK	SC0000302

BASF CORP./FIBERS DIV./CLEMSON PIPE #: 001 FLOW: 0.114	MAJOR INDUSTRIAL
TWELVEMILE CREEK CATEECHEE VILLAGE INC. WWTP PIPE #: 001 FLOW: 0.02	SC0022012 MINOR DOMESTIC
TWELVEMILE CREEK TRIBUTARY PICKENS COUNTY PSC/CENTRAL/NORTH PLT PIPE #: 001 FLOW: 0.15	SC0024996 MINOR DOMESTIC
TWELVEMILE CREEK TRIBUTARY MASSINGILL TRAILER COURT PIPE #: 001 FLOW: 0.0024	SC0027049 MINOR DOMESTIC
GOLDEN CREEK PICKENS COUNTY-LIBERTY/ROPER LAGOON PIPE #: 001 FLOW: 0.50	SC0026191 MINOR DOMESTIC
GOLDEN CREEK CITY OF EASLEY/GOLDEN CREEK LAGOON PIPE #: 001 FLOW: 0.58	SC0023035 MINOR DOMESTIC
GOLDEN CREEK VULCAN MATERIALS CO. PIPE #: 001 FLOW: M/R	SCG730065 MINOR INDUSTRIAL
MURPHEY BRANCH PICKENS COUNTY-LIBERTY/CRAMER LAGOON PIPE #: 001 FLOW: 0.157	SC0026166 MINOR DOMESTIC
PIKE CREEK AMERICAN HOUSE SPINNING PIPE #: 001 FLOW: 0.0013	SC0000132 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
PICKENS COUNTY LANDFILL DOMESTIC	DWP-086; DWP-034; 391001-1201 CLOSED
PICKENS COUNTY TRANSFER STATION TRANSFER STATION	391001-6001 ACTIVE
PICKENS COUNTY LANDFILL DOMESTIC THRIFT DEVELOPMENT LCD LANDFILL LC&D	391001-1101 ACTIVE 392702-1701 ACTIVE

Mining Activities

<i>MINING COMPANY</i>	<i>PERMIT #</i>
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MINE NAME

VULCAN CONSTRUCTION CO.
LIBERTY QUARRY

MINERAL

0060-77
GRANITE

Water Quantity***WATER USER
STREAM***

CITY OF EASLEY CENTRAL WD
TWELVEMILE CREEK

***TOTAL PUMP. CAPACITY (MGD)
RATED PUMP. CAPACITY (MGD)***

4.0
2.0

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains portions of the Towns of Six Mile, Central, Norris, and Liberty and the Cities of Clemson and Easley. This growth will occur, provided there is sufficient infrastructure to accommodate it. The residential growth trend is eastward from Clemson to Central, Liberty, and Easley along S.C. Hwy 93 and U.S. Hwy 123. Easley has the greatest potential for commercial growth due to its proximity to S.C. 93, 153, and 8, and U.S. 123. Industrial growth in this watershed is due, in part, to the established infrastructure and transportation system, and the proximity of I-85. The topography of Easley is most conducive to industrial development and gives it the highest potential for growth in this area. The Town of Liberty also has a high potential for industrial growth due to the large tracts in the Liberty vicinity that are projected to develop, pending the construction of new or expanded sewage disposal plants in the area. Construction of these will encourage growth along the U.S. 123 corridor as well.